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(FORM UPDATED: 08/11/2010)

## WISCONSIN STATE LEGISLATURE ... PUBLIC HEARING - COMMITTEE RECORDS

**2007-08**

(session year)

**Joint**

(Assembly, Senate or Joint)

**Committee for Review of Administrative Rules...**

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\* Contents organized for archiving by: Stefanie Rose (LRB) (August 2012)



State of Wisconsin \ Department of Commerce

# RULES IN FINAL DRAFT FORM

**Rule No.:** Chapters Comm 20-25

**Relating to:** Uniform (1-2 Family) Dwelling Code

**Clearinghouse Rule No.:** 08-043

The Wisconsin Department of Commerce proposes an order to repeal ss. Comm 20.05 (4), Comm 20.07 (29m), Comm 20.07 (52), Comm 20.24 Table 20.24-4, Comm 20.24 Table 20.24-10, Comm 21.02 (1) (c) 2. and 3. and note, Comm 21.03 (8) and (9), Comm 21.05 (3) and (4), Comm 21.08 (1) (a) 4., Comm 21.10 (2) (g), Comm 21.10 (4) (b), Comm 21.22 (1m), Comm 21.22, Table 21.22-C, Comm 21.25 (1) (b), Comm 21.26, Tables 21.26-B and B1, and Comm 21.26 (5) (c);

to renumber ss. Comm 20.05 (5) to (9), Comm 20.24 Table 20.24-5, Comm 20.24 Tables 20.24-7 to 20.24-9, Comm 21.02 (1) (c) 1., Comm 21.02 (3) (a) to (e), Comm 21.03 (10) to (12), Comm 21.045 (1) to (4), Comm 21.05 (5), Comm 21.08 (1) (c), Comm 21.10 (2) (c) to (f), Comm 21.10 (4) (a), Comm 21.10 (3) and (4), Comm 21.15 (1) and (2) and 21.15 (intro.), Comm 21.17 (3) (d) 1. to 6., Comm 21.22 (3) (a) and (b) and 21.22 (3) (intro.), Comm 21.24 (3) (c), Comm 21.25 (1) (a), Comm 21.25 (6) (a) 4., Comm 21.26 (3) (a) 21.26 (3) (intro.), Comm 23.02 (3) (a), Comm 23.04 (4) and 23.04 (1) to (3);

to renumber and amend ss. Comm 20.24 Table 20.24-6, Comm 21.02 (3) (intro.), Comm 21.045 (intro.), Comm 21.08 (1) (c), and Comm 23.04 (intro.);

to amend ss. Comm 20.02 (2) (e), Comm 20.05 (6), Comm 20.13 (2), 20.14 (1), 20.14 (2) (a) 2. and 20.14 (2) (b) 2., Comm 20.24, Table 20.24-1, Table 20.24-2 line 1, and Table 20.24-3, Comm 20.24 Table 20.24-8 and Table 20.24-9, Comm 20.24 Table 20.24-11, Comm 20.24 Table 20.24-13, Comm 21.02 (3) (title), Comm 21.02 (3) (e), Comm 21.03 (title), Comm 21.03 (6) (e) 5., Comm 21.04 (2) (c) 2. and 21.04 (2) (c) 3. b., Comm 21.04 (3) (c) 1., Comm 21.05 (title), Comm 21.08 (intro.) and Table 21.08, Comm 21.08 (2) (c), Comm 21.09 (1) (b), 21.09 (2) and 21.09 (3), Comm 21.10 (2) (e), 21.10 (2) (f) 1. and 21.10 (2) (g), Comm 21.10 (2) (i), Comm 21.15 (1), Comm 21.15 (2) (a) Note, Comm 21.15 (2) (b), Comm 21.15 (2) (e), Comm 21.17 (1) (a) 2. and 21.17 (1) (b) 2., Comm 21.17 (3) (d) 6., Comm 21.18 (1) (d) 2.b., Comm 21.18 Tables 21.18-C, D, E and F, footnote a, Comm 21.22 (8) (b), Comm 21.24 (2), Comm 21.25 (1) (title), Comm 21.26 (3) (a), Comm 21.26 (4) (b), Comm 21.26 (7) (a) 2., Comm 21.40 (2) (b) 13., Comm 23.02 (3) (d), Comm 23.04 (4), Comm 23.045 (2) (b), and Comm 23.09 (1);

to repeal and recreate ss. Comm 20.02 (1), Comm 20.04 (2) and (5), Comm 20.09 and 20.10, Comm 21.03 (3), Comm 21.03 (7), Comm 21.04 (1), Comm 21.05 (3) (a) and 21.05 (3) (b), Comm 21.08 (1) (d) 1., Comm 21.10 (2) (b), Comm 21.10 (2) (h), Comm 21.18 (3) (a), Comm 21.18 (4) and 21.22 (1), Comm 21.25 Table 21.25-A, Comm 21.26 (1), Comm 21.26 (5) (a), Comm 21.26 (8) and 21.26 (12), Comm 21.27 and 21.28, Comm 23.08 (7), and Comm 23.08, Table 23.08-B;

and to create ss. Comm 20.04 (6), Comm 20.05 (9), Comm 20.065, 20.07 (5m), 20.07 (18) and 20.07 (24v), Comm 20.07 (34s), Comm 20.07 (53f) and (77f), Comm 20.24 Table 20.24-6, Comm 20.24 Table 20.24-7, Comm 20.24 Table 20.24-12, Comm 21.02 (3) (b) 3., Comm 21.02 (3) (g), Comm 21.035, Comm 21.04 (2) (c) 3. c. and 4. c., Comm 21.04 (2) (g) and 21.04 (3) (a) 2. Note, Comm 21.04 (3) (a) 3. c., Comm 21.045 Note, Comm 21.05 (3) Note, Comm 21.08 (1) (c) 2., Comm 21.09 (6), Comm 21.095, Comm 21.10 (1) and 21.10 (2) (a), Comm 21.10 (2) (c), Comm 21.10 (2) (k), Comm 21.10 (3), Comm 21.10 (6) and 21.11 Note, Comm 21.17 (3) (d) 1.,

Comm 21.18 (1) (d) 1. Note, Comm 21.18 (2) (a) (title), 21.18 (2) (b) (title) and 21.18 (2) Note, Comm 21.22 (3) (d), Comm 21.24 (3) (c), 21.24 (3) Note and 21.24 (4), Comm 21.25 (6) (a) 4. and 21.25 (7), (8) and (9), Comm 21.26 (7) (a) 5. to 7., Comm 21.26 (7) (c), Comm 23.02 (3) (a) 2., and Comm 23.04 (5).

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### Analysis of Proposed Rules

#### **1. Statutes Interpreted:**

Sections 101.02 (1), 101.63 (1), 101.64 (3), 101.72 and 101.74, Stats.

#### **2. Statutory Authority:**

Sections 101.02 (1), 101.63 (1), 101.64 (3), 101.72 and 101.74, Stats.

#### **3. Related Statute or Rule:**

Sections 101.63 (5) and 101.73 (8), Stats.

#### **4. Explanation of Agency Authority:**

Under the statute sections listed above, the Department of Commerce has the responsibility to adopt rules that establish uniform, statewide standards for the construction of 1- and 2-family dwellings. This code, in its entirety, first went into effect in 1980. Sections 101.63 (5) and 101.73 (8), Stats., require the department to review these rules on a biennial basis.

#### **5. Summary of Proposed Rules:**

The vast majority of these proposed rule changes are intended to clarify current policies and requirements. The substantial changes to the code are as follows:

- Sections Comm 20.02 (1), 20.09 and 20.10 relating to scope of the code, permit issuance and inspections, respectively, have been reformatted and expanded.
- Section Comm 20.24 on adopted national standards is updated to include the latest editions. One standard on duct construction is dropped and two new ones on fire sprinkler construction and log home construction are added.
- Section Comm 21.24 (4) has new requirements for water-resistive barriers under the exterior covering of the dwelling.
- Section Comm 21.25 (7) has new requirements for the construction of short "cripple walls" on top of foundation walls.
- Sections Comm 21.25 (8) and (9) has new requirements for wind bracing of wood frame walls that bring the Wisconsin requirements in line with national standards.
- Chapter Comm 22, containing the energy conservation requirements, is repealed and recreated to bring the Wisconsin requirements in line with the national model energy code. There are new prescriptive component requirements as an alternative to the traditional total envelope heat loss requirements.

#### **6. Summary of, and Comparison with, Existing or Proposed Federal Regulations:**

There appear to be no federal regulations governing general one- and 2-family dwelling construction.

## **7. Comparison to Rules in Adjacent States:**

An internet search of the State of Illinois' website did not reveal the existence of a statewide one- and 2-family dwelling code. Dwelling regulation appears to be left up to the individual local units of government.

An internet search of the State of Iowa's website did not reveal the existence of a statewide one- and 2-family dwelling code. Dwelling regulation appears to be left up to the individual local units of government.

An internet search of the State of Michigan's website showed a mandatory, statewide one- and 2-family dwelling code. The Residential Construction Code under the Construction Code Commission General Rules, section 408.305, contains the state amendments to the 2006 International Residential Code (IRC) developed by the International Code Council (ICC). There is a separate energy code.

An internet search of the State of Minnesota's website showed a mandatory, statewide one- and 2-family dwelling code. Minnesota Department of Labor and Industry, Chapter 1309 adopts the 2006 International Residential Code (IRC), chapters 2-10 and 43. Chapters 2-10 contain the general construction provisions of the IRC. Separate state codes apply to the energy, mechanical, plumbing, electrical and flood protection provisions of dwelling construction.

## **8. Summary of Factual Data and Analytical Methodologies:**

The department received input at regular quarterly meetings during the entire development cycle from the Uniform Dwelling Code Council. The makeup of this Council is set under s. 15.157 (3), Stats. The members are appointed by the Governor's Office. The Council's composition reflects a variety of organizations whose members include many types of small businesses. Through this Council, the department is able to gather information on the potential impacts of the administrative and technical requirements of the code.

For the majority of this development cycle, the UDC Council was comprised of:

Allan Bachmann, Madison, Bachmann Construction;  
Jeffrey Bechard, Eau Claire, Sheet metal Workers Local 18;  
Ken Dentice, City of La Crosse Building Inspection;  
David Dolan-Wallace, Green Bay, Martinson Architects;  
Tom Doleschy, Muskego, Chicago Regional Council of Carpenters;  
Dan Gorski, Madison, Veridian Homes;  
Robert Jakel, City of Kaukauna;  
Steven Levine, Madison, Wisconsin Public Service Commission;  
Mike Mueller, Milwaukee, International Brotherhood of Electrical Workers Local 494;  
Daniel Nowak, City of Oak Creek Building Inspection;  
Frank Opatik, Wausau, Wausau Homes;  
Tom Palecek, Marshfield, Wick Building Systems;  
Gary Ruhl, Oshkosh, NE Wisconsin Building & Construction Trades Council;  
Mary Schroeder, Brookfield, Miller Homes;

Katy Stadtherr, City of Green Bay Building Inspection;  
John Vande Castle, Fond du Lac, Fond du Lac Mosaic Tile Company, Inc.; and  
Mike Wallace, City of Hudson Building Inspection

**9. Analysis of Supporting Documents Used to Determine Effect on Small Business or in Preparation of Economic Impact Report:**

These proposed rules do not significantly impact small businesses. The proposed rules do adopt more current technical design and construction standards used by designers and various tradespersons but those standards do not have a significant impact. The proposed rules do enhance the wind bracing requirements resulting in increase material and labor costs that would be passed on to the consumer. The design, material, and labor costs for the proposed specified methods of wind bracing are estimated to be \$360 or 0.15% for an 1800 square foot, two-story home valued at \$250,000 and \$100 or 0.06% for a 1200 square foot, single story home valued at \$180,000. The proposed rules will add an additional insulation requirement beneath a heated slab in contact with earth regardless of the depth below grade. Such heated slabs are allowed but not required by the code. For those homes that utilize this heated slab construction the added cost would be in the range of \$.75 per square foot. For an 1800 square foot, two-story home with a 900 square feet heated basement floor the cost increase would be \$675, or three tenths of one percent for a home valued at \$250,000.

**10. Agency Contact:**

Duane Hubeler, UDC Consultant, [duane.hubeler@wi.gov](mailto:duane.hubeler@wi.gov), (608) 266-1390

**11. Public Hearing Comments:**

The hearing record on this proposed rulemaking will remain open until July 7, 2008. Written comments on the proposed rules may be submitted to Duane Hubeler, at the Department of Commerce, P.O. Box 2658, Madison, WI 53701-2658, or e-mail to [duane.hubeler@wi.gov](mailto:duane.hubeler@wi.gov)

SECTION 1. Comm 20.02 (1) is repealed and recreated to read:

Comm 20.02 (1) GENERAL. The provisions of this code apply to all of the following:

(a) All one- and two-family dwellings built on or after the effective dates under s. Comm 20.03.

**Note:** This includes site-built dwellings, manufactured buildings used as dwellings, modular homes and dwellings that may be designated as cabins, seasonal homes, temporary residences, etc., (except for manufactured or HUD homes, which are covered separately under this section).

(b) Adult family homes providing care, treatment and services for 3 or 4 unrelated adults built on or after the effective dates under s. Comm 20.03.

(c) Community-based residential facilities providing care, treatment and services for 5 to 8 unrelated adults built on or after the effective dates under s. Comm 20.03.

(d) The onsite installation of a mobile home or manufactured home on piers, regardless of the date of production of the home.

**Note:** The design and construction of a manufactured home is regulated by the U.S. Department of Housing and Urban Development and is not subject to UDC requirements. Prior to regulation by HUD in 1976, manufactured homes were known as mobile homes and their design and construction were not uniformly regulated. See s. Comm 20.07 (52m) for the statutory definition.

(e) The onsite installation of a manufactured home, regardless of the type of foundation, where the manufactured home has a production date on or after April 1, 2007.

(f) The design and construction of a crawlspace, basement or foundation, other than piers, under a manufactured home where the manufactured home has a production date on or after the effective dates under s. Comm 20.03.

(g) All garages, carports, porches, stoops, decks, balconies, stairways and similar structures that are attached to any building covered under this section that was constructed or had a production date on or after the effective dates under s. Comm 20.03.

(h) Adjacent, unattached structures listed under par. (f) that serve an exit from a dwelling.

SECTION 2. Comm 20.02 (2) (e) 1. is amended to read:

1. Implementing erosion and sediment control requirements that are more stringent than the standards of this ~~chapter~~ code when directed by an order of the United States Environmental Protection Agency or by an administrative rule of the department of natural resources under s. NR 151.004.

SECTION 3. Comm 20.04 (2) and (5) are repealed and recreated to read:

Comm 20.04 (2) ADDITIONS AND ALTERATIONS. Additions and alterations to dwellings covered by this code shall comply with all provisions of this code at the time of permit application or the beginning of the project, if no permit is required.

Comm 20.04 (5) REUSE OF A DWELLING OR FOUNDATION. (a) *Existing dwelling or manufactured home placed on a different foundation.* Where an existing dwelling or manufactured home is placed on a different foundation, the new foundation is considered an addition or alteration to the existing dwelling or manufactured home.

**Note:** The applicability of this code to an addition or alteration to an existing dwelling or manufactured home is determined by the original date of construction of the dwelling or manufactured home and is not altered by any movement of the structure.

(b) *New dwelling or manufactured home.* A new dwelling or manufactured home placed on a new or existing foundation shall meet the permitting, construction and inspection requirements of a new dwelling or manufactured home.

SECTION 4. Comm 20.04 (6) is created to read:

Comm 20.04 (6) SEPARATED BUILDINGS. For a building to be considered a separate single-family dwelling or a separate two-family dwelling within the scope of this code, regardless of ownership or occupancy arrangements, all of the following conditions shall be met:

(a) No structural members other than a common footing may be shared between any 2 dwellings.

**Note:** Two separated, insulated foundation walls may share the same structural footing.

(b) The adjoining exterior walls of the separate dwellings shall each have exterior coverings meeting the requirements of s. Comm 21.24.

(c) The adjoining exterior walls, including foundations, of the separate dwellings shall each meet the energy requirements under ch. Comm 22, irrespective of any adjacent dwelling.

(d) Both sides of any 2 adjoining walls, floors, ceilings and attics between dwellings shall meet the dwelling separation requirements of s. Comm 21.08 (1) for 2 dwellings on the same property less than 5 feet apart.

**Notes:**

1. Flashing is acceptable to connect the roofs between dwelling units. See appendix for further information.

2. A building of 3 or more dwelling units without the separations specified in this section is a commercial building and shall meet the requirements set forth in chs. Comm 60 to 66.

SECTION 5. Comm 20.05 (4) is repealed.

SECTION 6. Comm 20.05 (5) to (9) are renumbered Comm 20.05 (4) to (8).

SECTION 7. Comm 20.05 (6), as renumbered, is amended to read:

Comm 20.05 (6) FARM BUILDINGS. The provisions of this code do not apply to the buildings used exclusively for farm operations and not for human habitation.

SECTION 8. Comm 20.05 (9) is created to read:

Comm 20.05 (9) MOTOR HOMES AND RECREATIONAL VEHICLES. The provisions of this code do not apply to motor homes and recreational vehicles that are, or have been, titled through the department of transportation.

**Note 1:** Section 340.01 (33m) and (48r), Stats., read as follows: "Motor home" means a motor vehicle designed to be operated upon a highway for use as a temporary or recreational dwelling and having the same internal characteristics and equipment as a mobile home.

"Recreational vehicle" means a vehicle that is designed to be towed upon a highway by a motor vehicle, that is equipped and used, or intended to be used, primarily for temporary or recreational human habitation, that has walls of rigid construction, and that does not exceed 45 feet in length.

**Note 2:** A "park model" is a recreational vehicle.

SECTION 9. Comm 20.065 is created to read:

**Comm 20.065 State jurisdiction.** (1) In accordance with s. 101.64 (8), Stats., municipalities administering the code may be monitored by the department for compliance with the administrative requirements under this code.

(2) In accordance with s. 101.653 (5), Stats., municipalities administering the code may be audited by the department for compliance with the erosion control requirements under this code.

SECTION 10. Comm 20.07 (5m), and Comm 20.07 (18) are created to read:

Comm 20.07 (5m) "Attached", defining the relationship between another building and a dwelling, means at least one of the following conditions is present:

(a) There is a continuous, weatherproof roof between the two structures.

**Note:** The sides are not required to be enclosed with walls.

(b) There is a continuous, structural floor system between the two structures.

(c) There is a continuous foundation system between the two structures.

Comm 20.07 (18) "Common use area" means kitchens, hallways, basements, garages and all habitable rooms.

**Note:** These areas must meet the circulation requirements under s. Comm 21.03 (8).

SECTION 11. Comm 20.07 (29m) is repealed.

SECTION 12. Comm 20.07 (34s) is created to read:

Comm 20.07 (34s) "Foundation" means the structural system used to transfer the weight of the building to the earth.

**Note:** The foundation may include one or more components such as footings, piers, columns, slabs and walls.

SECTION 13. Comm 20.07 (52) is repealed.

SECTION 14. Comm 20.07 (53f) and (77f) are created to read:

Comm 20.07 (53f) "Modular home" has the meaning given in s. 101.71 (6), Stats.

**Note:** Under s. 101.71 (6) (a), Stats., "modular home" means any structure or component thereof which is intended for use as a dwelling and:

1. Is of closed construction and fabricated or assembled on-site or off-site in manufacturing facilities for installation, connection, or assembly and installation, at the building site; or
2. Is a building of open construction which is made or assembled in manufacturing facilities away from the building site for installation, connection, or assembly and installation, on the building site and for which certification is sought by the manufacturer.

(b) "Modular home" does not mean any manufactured home under s. 101.91 or any building of open construction which is not subject to par. (a) 2.

**Note:** See s. Comm 20.07 (52m) for the definition of manufactured home.

Comm 20.07 (77f) "Water-resistive barrier" means a material, including flashing, behind an exterior wall covering that is intended to resist liquid water that has penetrated behind the permanent weather-resistant finish from further intruding into the exterior wall assembly.

SECTION 15. Comm 20.09 and 20.10 are repealed and recreated to read:

**Comm 20.09 Procedure for obtaining uniform building permit. (1) APPLICATION.** Application for a Wisconsin uniform building permit shall be on forms obtained from the

department, the municipality or the authorized UDC inspection agency administering and enforcing this code. No application shall be accepted that does not contain all the information requested on the form.

**Note 1:** See appendix for a copy of the Wisconsin uniform building permit and application.

**Note 2:** Any municipality exercising jurisdiction may require reasonable supplementary information not contained on the Wisconsin building permit application.

(2) FILING OF PERMIT APPLICATIONS. (a) *Construction or installation of a dwelling.* 1. A Wisconsin uniform building permit application for the construction or installation of a dwelling shall be filed with the municipality or the authorized UDC inspection agency administering and enforcing this code.

2. The municipality or authorized UDC inspection agency shall forward a copy of all applications for new dwellings to the department within 30 business days after permit issuance.

**Note:** The department requires copies of permits that are issued for new dwelling construction or installation, only. Permits issued for additions, alterations, garage construction, etc., should not be filed with the department.

(b) *Additions, alterations and repairs.* 1. When required by local ordinance, permit applications for additions, alterations and repairs shall be filed with municipalities and counties in accordance with their adopted ordinances.

**Note:** The Department of Commerce requires copies of permits that are issued for new dwelling construction only. Any permits issued for additions, alterations, repairs, garage construction, etc. are not required to be filed with the department.

2. Pursuant to s. 101.65 (1m), Stats., a building permit required under subd. 1. may not be issued unless the conditions of sub. (5) (c) are satisfied, except as provided under s. 101.654 (1) (b), Stats.

3. Building permits for additions, alterations and repairs are not required in municipalities where the department has jurisdiction under s. 101.651 (3) (b), Stats.

(c) *General requirements.* 1. The permit application shall be reviewed by a certified UDC inspector.

2. A permit may be issued only after approval of the requirements under this section by a certified UDC inspector.

3. Dwellings for which a permit has been issued shall be inspected in accordance with s. Comm 20.10.

(3) FEES. (a) *Municipal fees.* 1. The municipality shall, by ordinance, determine fees to cover expenses of plan examination, inspection and the issuance of the Wisconsin uniform building permit.

2. The municipality shall purchase a Wisconsin uniform building permit seal from the department for each new dwelling in accordance with s. Comm 2.34.

(b) *Inspection agency fees.* 1. UDC inspection agency fees shall be determined by contract between the municipality and the agency or between the department and the agency, where the agency has been authorized to conduct inspections on behalf of the department.

2. A UDC inspection agency shall purchase a Wisconsin uniform building permit seal from the department in accordance with s. Comm 2.34.

(4) **PLAN SUBMITTALS.** At least 2 sets of plans for all one- and 2-family dwellings shall be submitted to the municipality or authorized UDC inspection agency administering and enforcing this code, for examination and approval at the time the Wisconsin uniform building permit application is filed.

(5) **REQUIRED PLANS.** The required building plans shall be legible and drawn to scale or dimensioned and shall include all of the following:

(a) *Site plan.* The site plan shall show all of the following:

1. The location of the dwelling and any other buildings, wells, surface waters and dispersal systems on the site with respect to property lines and surface waters adjacent to the site.

2. The areas of land-disturbing construction activity and the location of all erosion and sediment control measures to be employed in order to comply with s. Comm 21.125.

3. The pre-construction ground surface slope and direction of runoff flow within the proposed areas of land disturbance.

(b) *Floor plan.* 1. Floor plans shall be provided for each floor.

2. The following features shall be included on all floor plans:

a. The size and location of all rooms, doors, windows, structural features, exit passageways and stairs.

b. The use of each room.

c. The location of plumbing fixtures, chimneys, heating and cooling appliances, and a heating distribution layout.

d. The location and construction details of the braced wall lines.

(c) *Elevations.* The elevations shall show all of the following:

1. The exterior appearance of the building, including the type of exterior materials.
2. The location, size and configuration of doors, windows, roof, chimneys, exterior grade, footings and foundation walls.

(d) *Storm water management plan.* 1. A storm water management plan shall be prepared for a site where one acre or more of land will be disturbed.

2. The storm water management plan shall delineate and describe the post-construction storm water management practices to be employed to comply with s. Comm 21.126.

(6) **REQUIRED DATA.** (a) All plans submitted for approval shall be accompanied by sufficient data, calculations and information to determine if the dwelling will meet the requirements of this code.

(b) The data and information for determining compliance with the energy conservation standards shall be submitted in a format approved by the department.

(c) Except as required under s. Comm 21.33, a municipality exercising jurisdiction may not require plans or calculations to be stamped or sealed by an architect or engineer.

(d) The name of the initial downstream receiving water of the state from the dwelling shall be identified, regarding erosion and sediment control and storm water management.

(7) **MASTER PLANS.** (a) Where a dwelling is intended to be identically and repetitively constructed at different locations, a master plan may be submitted for approval.

(b) The plans shall include plans and data as required under subs. (5) and (6).

(c) If the plans conform to the provisions of the code, an approval and a master plan number shall be issued.

(d) The number issued may be used in lieu of submitting building plans for each location.

(e) A plot plan shall be submitted for each location at the time of application for the Wisconsin uniform building permit.

(8) **APPROVAL OF PLANS.** (a) If the municipality or authorized UDC inspection agency administering and enforcing the code determines that the plans submitted for a one- or 2-family dwelling substantially conform to the provisions of this code and other legal requirements, an approval shall be issued.

(b) The plans shall be stamped "conditionally approved" by a certified inspector who holds the respective credential for the plans reviewed.

(c) One copy shall be returned to the applicant and one copy shall be retained by the municipality or authorized UDC inspection agency administering and enforcing this code.

(d) The conditions of approval shall be indicated by a letter or on the permit.

(e) All conditions of the approval shall be met during construction.

(9) ISSUANCE AND POSTING OF PERMITS. (a) *Uniform building permit*. 1. The Wisconsin uniform building permit shall be issued if the requirements for filing and fees are satisfied and the plans have been conditionally approved.

2. Pursuant to s. 101.65 (1m), Stats., a Wisconsin uniform building permit may not be issued to a person unless the person complies with subs. 3. and 4., except as provided under s. 101.654 (1) (b) and (c) 2., Stats.

**Note 1:** Section 101.654 (1) (b), Stats., exempts an owner of a dwelling who resides or will reside in the dwelling and who applies for a building permit to perform work on the dwelling from obtaining a dwelling contractor financial responsibility registration. Under s. 101.65 (1r), an owner who obtains a building permit needs to sign a statement advising the owner of the potential consequences of hiring a contractor to perform work under the permit who is not bonded or insured under s. 101.654 (2) (a), Stats.

**Note 2:** Section 101.654 (1) (c) 2., Stats., reads: "The continuing education requirements under par. (a) and the rules promulgated by the department under sub. (1m) do not apply to any person who holds a current license issued by the department at the time that the person obtains a building permit if the work the person does under the permit is work for which the person is licensed."

3. A person applying for a Wisconsin uniform building permit for work covered under chs. Comm 21 or 22 who is not the owner who resides or will reside in the dwelling shall hold one of the following credentials issued by the department:

- a. A dwelling contractor certification.
- b. A dwelling contractor - restricted certification.
- c. A dwelling contractor financial responsibility certification.
- d. A dwelling contractor financial responsibility – restricted certification.

4. A person applying for a Wisconsin uniform building permit for work covered under chs. Comm 21 or 22 who is not the owner who resides or will reside in the dwelling shall hold or engage, as an employee, a person who holds a certification issued by the department as a dwelling contractor qualifier.

5. The permit shall expire 24 months after issuance if the dwelling exterior has not been completed.

6. Pursuant to s. 101.63 (7), Stats., the name and license number of the Wisconsin master plumber responsible for the installation of plumbing shall be entered on the permit by the issuing entity at the time of issuance.

(b) *Permit to start construction of footings and foundation.* 1. Construction may begin on footings and foundations prior to the issuance of the Wisconsin uniform building permit where a permit to start construction is obtained.

2. Upon submittal of the application for a permit to start construction, a plot plan, complete footing and foundation information including exterior grading, and a fee, the municipality or authorized UDC inspection agency enforcing this code may issue a permit to start construction of the footings and foundation.

3. The issuance of a permit to start construction shall not influence the approval or denial of the Wisconsin uniform building permit application.

(c) *Private onsite wastewater treatment systems.* Pursuant to s. 145.195, Stats., if the proposed construction requires connection to a private onsite wastewater treatment system, a Wisconsin uniform building permit may not be issued unless conformance with s. Comm 83.25 (2) has first been determined.

**Note:** See appendix for a reprint of s. Comm 83.25 (2).

(d) *Posting of permit.* 1. The Wisconsin uniform building permit shall be posted in a conspicuous place at the dwelling site.

2. The Wisconsin uniform building permit seal shall be affixed to the posted permit or to the Wisconsin uniform building permit application. The permit seal number shall appear on both documents.

(10) **DISAPPROVAL OF PLANS AND DENIAL OF PERMITS.** (a) *General.* Approval shall be denied if the municipality or authorized UDC inspection agency administering and enforcing this code determines that the Wisconsin uniform building permit application or the plans do not substantially conform to the provisions of this code and other legal requirements.

(b) *Denial of application.* A copy of the denied application, accompanied by a written statement specifying the reasons for denial, shall be sent to the applicant and to the owner as specified on the Wisconsin uniform building permit application.

(c) *Stamping of plans.* 1. Plans which do not substantially conform to the provisions of the code shall be stamped "not approved."

2. One copy shall be returned to the person applying for the Wisconsin uniform building permit and one copy shall be retained by the municipality or authorized UDC inspection agency administering and enforcing the code.

(d) *Appeals*. The applicant may appeal a denial of the application in accordance with the procedure outlined in s. Comm 20.21.

(11) **TIME-SPAN FOR APPROVAL OR DENIAL**. Action to approve or deny a uniform building permit application shall be completed within 10 business days of receipt of all forms, fees, plans and documents required to process the application, and completion of other local prerequisite permitting requirements.

**Comm 20.10 Inspections.** (1) **INSPECTOR CERTIFICATION**. All inspections, for the purpose of administering and enforcing this code, shall be performed by an inspector certified in accordance with ch. Comm 5 who holds the respective credential for the inspection performed.

(2) **GENERAL INSPECTION REQUIREMENTS**. (a) *General*. Inspections shall be conducted by the municipality or authorized UDC inspection agency administering and enforcing this code to determine if the construction or installations conform to the conditionally approved plans, the Wisconsin uniform building permit application and the provisions of this code.

(b) *Inspection notice*. 1. The applicant or an authorized representative shall request inspections from the municipality or authorized UDC inspection agency administering and enforcing this code.

2. Except as provided under subd. 3., construction may not proceed beyond the point of inspection until the inspection has been completed.

3. Construction may proceed if the inspection has not taken place by the end of the second business day following the day of notification or as otherwise agreed between the applicant and the municipality or authorized UDC inspection agency.

(3) **INSPECTION TYPES**. (a) *General*. The inspections described in pars. (b) to (I) shall be performed to determine if the work complies with this code.

(b) *Erosion control inspection*. Erosion control inspections shall be performed concurrently with all other required construction inspections. Additional inspections for erosion control may be performed by the delegated authority.

(c) *Foundation excavation inspection*. 1. The excavation for the foundation shall be inspected after the placement of any forms or required reinforcement and prior to the placement of the permanent foundation material.

2. If a drain tile system is required, by the local inspector or by groundwater levels in the excavation, the presence and location of bleeders used to connect the interior and exterior drain tile shall be inspected at the same time as the excavation.

**Note:** This excavation inspection may be used to determine the need for drain tile under s. Comm 21.17.

(d) *Foundation reinforcement inspection.* The placement of reinforcement shall be inspected where the reinforcement is required for code compliance.

(e) *Foundation inspection.* The foundation shall be inspected after completion. Where dampproofing, exterior insulation or drain tile are required for code compliance, the foundation shall be inspected prior to backfilling.

(f) *Rough inspection.* 1. A rough inspection shall be performed for each inspection category listed under subpars. a. to e. after the rough work is constructed but before it is concealed.

a. The basement floor area.

**Note:** The inspection of the basement floor area should include the following: any underfloor plumbing, electrical, or HVAC; any interior drain tile with base course required under s. Comm 21.17; the structural base course for the floor slab if required under s. Comm 21.20; and the underfloor vapor retarder as required under s. Comm 22.38.

b. General construction, including framing.

c. Rough electrical.

d. Rough plumbing.

e. Rough heating, ventilating and air conditioning.

2. All categories of work for rough inspections may be completed before the notice for inspection is given, provided the work has not been covered.

3. The applicant may request one rough inspection or individual rough inspections.

4. A separate fee may be charged for each individual inspection.

(g) *Insulation inspection.* An inspection shall be made of the insulation and vapor retarders after they are installed but before they are concealed.

(h) *Final inspection.* 1. Except as provided under subd. 2., the dwelling may not be occupied until a final inspection has been made that finds no critical violations of this code that could reasonably be expected to affect the health or safety of a person using the dwelling.

2. Occupancy may proceed in accordance with local ordinances if the inspection has not been completed by the end of the fifth business day following the day of notification or as otherwise agreed between the applicant and the department or municipality.

(i) *Installation inspection.* An inspection shall be performed on the installation of a manufactured dwelling or manufactured home.

**Note:** The design and construction of manufactured homes is regulated by the federal Department of Housing and Urban Development under Title 24 CFR Part 3280.

(4) NOTICE OF COMPLIANCE OR NONCOMPLIANCE. (a) *General*. 1. Notice of compliance or noncompliance with this code shall be written on the building permit or another readily visible means and posted at the job site.

2. Upon finding of noncompliance, the municipality or authorized UDC inspection agency enforcing this code shall also notify the applicant of record and the owner, in writing, of the violations to be corrected.

3. Except as specified under par. (b), the municipality or authorized UDC inspection agency shall order all cited violations corrected within 30 days after written notification, unless an extension of time is granted under s. Comm 20.21.

(b) *Erosion and sediment control requirements*. 1. The time period allowed for compliance with the erosion and sediment control provisions under s. Comm 21.125 shall be determined based on the severity of the noncompliance in relation to soil loss or potential damage to the waters of the state.

2. Pursuant to s. 101.653 (7) (b), Stats., the department, a municipality or the designated UDC inspection agency may issue a special order directing an immediate cessation of construction work on other aspects of the dwelling until compliance with the erosion and sediment control provisions under s. Comm 21.125 is attained. Construction work may resume once the erosion and sediment control compliance corrections are completed.

**Note:** Section 101.653 (7) (b) reads: "The department or a city, village, town or county may issue a special order directing the immediate cessation of work on a one- or 2-family dwelling until the necessary plan approval is obtained or until the site complies with the rules promulgated under sub. (2)."

(5) VOLUNTARY INSPECTION. The department or its authorized representative may, at the request of the owner or the lawful occupant, enter and inspect dwellings, subject to the provisions of this code, to ascertain compliance with this code.

(6) RECORD KEEPING. (a) *Municipal enforcement*. Municipalities that have adopted an ordinance to enforce this code shall maintain records in accordance with all of the following:

1. A record shall be made of each visit to a site, each inspection type performed and the pass or fail results of each inspection.

2. Approved plans shall be retained for 4 years after completion of the dwelling.

3. Applications forms, correction orders, correspondence and inspection records shall be maintained for 7 years after completion of the dwelling.

(b) *State enforcement.* Inspectors working under state contract shall maintain records in accordance with the provisions of the contract that was in effect at the time the inspections were completed.

**Note:** Records generated by the plan review and inspection functions are public records and are subject to the open-records law.

SECTION 16. Comm 20.13 (2), Comm 20.14 (1), Comm 20.14 (2) (a) 2., Comm 20.14 (2) (b) 2. and Comm 20.21 (1) (intro.) are amended to read:

Comm 20.13 (2) **INSTALLATION.** A Wisconsin uniform building permit shall be obtained in accordance with ~~the procedures outlined in s. Comm 20.09 (1), (2), (3) and (4) (a) 1. (1) to (5) (a)~~ before any on-site construction falling within the scope of this code is commenced for a ~~manufactured dwelling~~ modular home. The permit shall be issued in accordance with s. Comm 20.09 ~~(5) (9)~~.

Comm 20.14 (1) **APPLICATION FOR APPROVAL.** (a) An application for approval of any ~~manufactured dwelling~~ modular home, building system or component shall be submitted to the department in the form required by the department, along with the appropriate fees in accordance with s. Comm 2.34.

(b) ~~Pursuant to s. Comm 2.07 (3), the~~ The department shall review and make a determination on an application for approval of a ~~manufactured dwelling~~ modular home, building system or component within 3 months.

Comm 20.14 (2) (a) 2. 'Compliance assurance program.' a. Three sets of the compliance assurance program shall be submitted for examination and approval.

b. The compliance assurance program ~~submitted to the department on behalf of the manufacturer~~ shall meet the standards of the Model Documents for the Evaluation, Approval and Inspection of Manufactured Buildings as adopted under Table 20.24-9 10 or an equivalent as determined by standard acceptable to the department.

Comm 20.14 (2) (b) 2. 'Compliance assurance program.' a. Three sets of the compliance assurance program shall be submitted to the department ~~on behalf of the manufacturer~~ for examination and approval of components.

b. The compliance assurance program shall meet the requirements established by the department or, where applicable, be in the form of the NBS "Model Rules and Regulations: Model Documents for the Evaluation, Approval and Inspection of Manufactured Buildings as adopted under Table 20.24-10 or an equivalent standard acceptable to the department.

Comm 20.21 (1) (intro.) **APPEALS OF ORDERS AND DETERMINATIONS BY A MUNICIPALITY EXERCISING JURISDICTION.** Appeals of order or determination of a municipality exercising jurisdiction under this code, including denials of application for permits,

shall be made in accordance with the procedure set out in ch. 68, Stats., prior to making an appeal to the department, except as follows:

SECTION 17. Comm 20.24 Table 20.24-1, Table 20.24-2, and Table 20.24-3 are amended to read:

**Table 20.24-1**

ACI	American Concrete Institute P.O. Box 9094 Farmington Hills, MI 48333
<b>Standard Reference Number</b>	<b>Title</b>
1. 318-99 <u>05</u>	Building Code Requirements for Structural Concrete
2. 530-99 <u>05</u>	Building Code Requirements for Masonry Structures
3. 530.1-99 <u>05</u>	Specification for Masonry Structures

**Table 20.24-2**

AF&PA	American Forest & Paper Association 1111 19 <sup>th</sup> Street, N.W., Suite 800 Washington, D.C. 20036
<b>Standard Reference Number</b>	<b>Title</b>
1. NDS-2001 <u>2005</u>	National Design Specification For Wood Construction Including 2001 <u>2005</u> Supplement
2. Technical Report #7 January, 1987 <u>ANSI/AF&amp;PA PWF - 2007</u>	The Permanent Wood Foundation System, Basic Requirements, except for section 3.3.1 <u>Permanent Wood Foundation Design Specification</u>

**Table 20.24-3**

AISC	American Institute of Steel Construction One E. Wacker Drive, Suite 3100 Chicago, IL 60601
<b>Standard Reference Number</b>	<b>Title</b>
1. ASD <u>360-05</u>	Specifications for Structural Steel Buildings; <del>Allowable Stress Design And Plastic Design, with</del> <del>Commentary, June, 1989</del>

SECTION 18. Comm 20.24, Table 20.24-4 is repealed.

SECTION 19. Comm 20.24, Table 20.24-5 is renumbered Comm 20.24, Table 20.24-4.

SECTION 20. Comm 20.24, Table 20.24-5 is created to read:

**Table 20.24-5**

ASCE	American Society of Civil Engineers 1801 Alexander Bell Drive Reston, VA 20191
<b>Standard Reference Number</b>	<b>Title</b>
SEI/ASCE 32-01	Design and Construction of Frost-Protected Shallow Foundations

SECTION 21. Comm 20.24, Table 20.24-6 is amended to read:

**Table 20.24-6**

ASHRAE	American Society of Heating, Refrigerating, and Air-conditioning Engineers, Inc. 1791 Tullie Circle, N.E. Atlanta, GA 30329
<b>Standard Reference Number</b>	<b>Title</b>
1. <del>2001</del> 2005 Fundamentals	ASHRAE Handbook, Fundamentals
2. <del>1995</del> <u>2003</u> HVAC Applications	ASHRAE HVAC Applications Handbook
3. <del>1996</del> <u>2004</u> HVAC Systems & Equipment	ASHRAE HVAC Systems & Equipment Handbook

SECTION 22. Comm 20.24, Table 20.24-10 is repealed.

SECTION 23. Comm 20.24, Table 20.24-11 and Table 20.24-12 are renumbered Comm 20.24, Table 20.24-12 and Table 20.24-13 and amended to read:

**Table 20.24-12**

SMACNA	Sheet Metal and Air Conditioning Contractors National Association Vienna, VA 22180 4201 Lafayette Center Drive Chantilly, VA 20151-1209
<b>Standard Reference Number</b>	<b>Title</b>
1. Seventh Edition, 1998	Residential Comfort System Installation Standards Manual
2. <del>Second Edition, 1995, including Addendum No. 1, November 1997</del>	<del>HVAC Duct Construction Standards—Metal And Flexible</del>
3. <del>2. Sixth</del> <u>Seventh</u> Edition, <del>1992</del> <u>2003</u>	Fibrous Glass Duct Construction Standards

**Table 20.24-13**

TPI	Truss Plate Institute, Inc.
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	583 D'Onofrio Drive Madison, WI 53719 218 North Lee Street, Suite 312 Alexandria, VA 22314
<b>Standard Reference Number</b>	<b>Title</b>
1. ANSI/TPI 1-1995 <u>2002</u>	National Design Standard for Metal Plate Connected Wood Truss Construction

SECTION 24. Comm 20.24, Table 20.24-9 is renumbered Comm 20.24, Table 20.24-11.

SECTION 25. Comm 20.24 Table 20.24-7 and Table 20.24-8 are renumbered Comm 20.24 Table 20.24-9 and Table 20.24-10 and amended to read:

**Table 20.24-9**

NAIMA	North American Insulation Manufacturers Association 44 Canal Center Plaza, Suite 310 Alexandria, VA 22314
<b>Standard Reference Number</b>	<b>Title</b>
1. 3 <sup>rd</sup> Edition, 1998 <u>2002</u>	Fibrous Glass <u>Residential</u> Duct Construction Standards

**Table 20.24-10**

NFPA	National Fire Protection Association 1 Batterymarch Park Quincy, MA 02269
<b>Standard Reference Number</b>	<b>Title</b>
1. NFPA 13D <u>2002</u>	<u>Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes</u>
1. 2. NFPA 54-1999, chapters 1-4 <u>2006</u>	National Fuel Gas Code

SECTION 26. Comm 20.24, Table 20.24-7 and Table 20.24-8 are created to read:

**Table 20.24-7**

ICC	The International Code Council 500 New Jersey Avenue, NW, 6 <sup>th</sup> Floor Washington, D.C. 20001
<b>Standard Reference Number</b>	<b>Title</b>
ICC/ANSI 400-2007	Standard on the Design and Construction of Log Structures

**Table 20.24-8**

ILBA	The International Log Builders' Association PO Box 775 Lumby, BC Canada V0E 2G0
<b>Standard Reference Number</b>	<b>Title</b>
2000, Section A	Log Building Standards for Residential, Handcrafted, Interlocking, Scribe-fit Construction

SECTION 27. Comm 21.02 (1) (c) 2. and 3. and note are repealed.

SECTION 28. Comm 21.02 (1) (c) 1. is renumbered Comm 21.02 (1) (c).

SECTION 29. Comm 21.02 (3) (title) is amended to read:

Comm 21.02 (3) (title) ~~STRUCTURAL ANALYSIS STANDARDS.~~

SECTION 30. Comm 21.02 (3) (a) to (e) are renumbered Comm 21.02 (3) (b) to (f).

SECTION 31. Comm 21.02 (3) (intro.) is renumbered Comm 21.02 (3) (a) and amended to read:

Comm 21.02 (3) (a) *General*. Structural Design, construction, installation, practice and structural analysis shall conform to the following nationally recognized standards.

SECTION 32. Comm 21.02 (3) (b) 3., as renumbered, is created to read:

Comm 21.02 (3) (b) 3. Sawn lumber that is not graded in accordance with the standards under subd. 1., shall use the NDS published allowable design stresses for the lumber species using grade number 3 when used for studs, stringers, rafters or joists and may use grade number 1 when used for beams, posts or timbers.

SECTION 33. Comm 21.02 (3) (e), as renumbered, is amended to read:

Comm 21.02 (3) (e) *Masonry*. The design and construction of masonry shall conform to the provisions of the ~~Concrete Masonry Handbook for Architects, Engineers, Builders~~. following standards:

1. ACI 530, Building Code Requirements for Masonry Structures.

2. ACI 530.1, Specification for Masonry Structures.

SECTION 34. Comm 21.02 (3) (g) is created to read:

Comm 21.02 (3) (g) *Whole logs*. Dwellings constructed of whole logs shall conform to the following standards:

1. ILBA Log Building Standards for Residential, Handcrafted, Interlocking, Scribe-fit Construction.

**Note:** This standard requires the minimum log diameter to be 8 inches.

2. ICC/ANSI 400, Standard on the Design and Construction of Log Structures.

SECTION 35. Comm 21.03 (title) and Comm 21.03 (1) (b) are amended to read:

Comm 21.03 (title) **Exits, doors and hallways.**

Comm 21.03 (1) (b) At least one of the exits shall discharge to grade and may not go through a garage. This exit may include interior or exterior stairs.

SECTION 36. Comm 21.03 (3) is repealed and recreated to read:

Comm 21.03 (3) **EXITS ABOVE THE SECOND FLOOR.** (a) Except as provided under pars. (b) and (c), each habitable floor above the second floor shall be provided with at least 2 exits that meet all of the following requirements:

1. The exits shall be stairways or ramps that lead to the second floor or discharge to grade.

2. The exits shall be located such that an exit is accessible to the second floor if another exit is blocked.

(b) A second stairway or ramp exit is not required for habitable areas on a third floor that meet all of the following requirements:

1. The habitable area consists of a single room.

**Note:** Non-habitable areas, such as closets and bathrooms may be partitioned off.

2. The room is not used for sleeping.

3. The habitable area has a floor area of 400 square feet or less.

4. There is at least one egress window meeting the requirements of sub. (6) in the habitable area.

(c) A second stairway or ramp exit is not required for habitable areas on a third floor that meet all of the following requirements:

1. The dwelling is fully sprinklered in accordance with NFPA 13R or NFPA 13D.
2. If a required exit includes an attached garage, the garage shall be sprinklered.

SECTION 37. Comm 21.03 (6) (e) 5. is amended to read:

Comm 21.03 (6) (e) 5. a. Ladders or other steps used to comply with subd. 4. may infringe on the required area of the areaway by a maximum of 6 inches.

b. Ladder rungs shall have a minimum inside width of at least 12 inches and shall project at least 3 inches from the wall behind the ladder.

c. Ladder rungs shall be able to support a concentrated load of 200 pounds.

d. Ladder rungs shall have a maximum rise of 12 inches between rungs and shall extend to within 12 inches of exterior grade.

SECTION 38. Comm 21.03 (7) is repealed and recreated to read:

Comm 21.03 (7) DOORS USED FOR EXITING. (a) Doors used for exiting from a dwelling shall meet the following dimensions:

1. At least one exit door shall be a swing-type door at least 80 inches high by 36 inches wide.
2. Except as allowed under subs. 3. and 4., other required exit doors shall be at least 76 inches high by 32 inches wide.
3. Where double doors are used as a required exit, each door leaf shall provide a clear opening at least 30 inches wide and be at least 76 inches high.
4. Where sliding doors are used as a required exit, the clear opening shall be at least 30 inches wide and be at least 76 inches high.

(b) All exit doors shall be openable from the interior without the use of a key.

SECTION 39. Comm 21.03 (8) and (9) are repealed.

SECTION 40. Comm 21.03 (10) to (12) are renumbered Comm 21.03 (8) to (10).

SECTION 41. Comm 21.035 is created to read:

**Comm 21.035 Interior circulation.** (1) DOORS AND OPENINGS. All doors and openings to the following areas shall be at least 80 inches high and provide either a net clear opening width of 30 inches or be a 32-inch door:

(a) Except as provided under pars. (b) and (c), all entrances into common use areas.

(b) At least 50% of the bedrooms.

(c) 1. At least one full bathroom, including doors or openings to a sink, toilet and tub or shower. If this bathroom is accessible only through a bedroom, the bedroom door shall meet the minimum width requirements of this section.

2. If one or more full bathrooms are provided on the first floor, the bathroom meeting the requirements under this section shall be on the first floor.

**Note:** This section does not require a full bathroom on the first floor.

(2) HALLWAYS. (a) Except as allowed under par. (b), the clear width of hallways shall be at least 36 inches.

(b) The following are allowed to infringe on the required clear width of a hallway:

1. Door hardware and finish trim.

2. Handrails may infringe into the minimum width of a hallway up to 4½ inches on each side.

3. Heating registers may infringe into the minimum width of a hallway up to 4½ inches and no part of the register may be more than 38 inches above the floor.

4. Ducts, pipes, light fixtures, structural features, and corner treatments that are within 84 inches of the floor may infringe into the minimum width of a hallway by a maximum of 4½ inches on each side.

5. Unlimited infringements are allowed in a hallway more than 84 inches above the floor.

(3) KITCHENS. (a) There shall be at least 30 inches of clearance between a wall, a permanently-installed kitchen island, permanently-installed kitchen cabinets and the following kitchen appliances, if provided:

1. A range, cook top or oven.
2. A sink, refrigerator or freezer.

(b) Measurements shall be taken from the face of the wall, island, cabinet or appliance, ignoring knobs and handles.

**Note:** See ICC/ANSI A117.1 chapter 10 for more guidelines relating to doors and accessible routes. Under that standard, doors must be at least 80-inches in height and provide a minimum net clear opening of 31-3/4-inches in width in order to provide accessibility for people with disabilities.

SECTION 42. Comm 21.04 (1) is repealed and recreated to read:

Comm 21.04 (1) SCOPE. (a) *General*. Except as provided under par. (b), the following stairways shall conform to the requirements of this section.

1. Every interior and exterior stairway attached to, or supported by any part of the structure covered under this code.
2. Tub access steps, unless they are an integral part of an approved plumbing product.

(b) *Exceptions*. The following stairways are not required to comply with the requirements of this section:

1. Stairways leading to non-habitable attics or crawl spaces.
2. Non-required stairways connecting the basement directly to the exterior of the structure without communicating with any other part of the structure.

SECTION 43. Comm 21.04 (2) (c) 2. and Comm 21.04 (2) (c) 3. b. are amended to read:

Comm 21.04 (2) (c) 2. 'Spiral staircase treads.' Spiral staircase treads shall have a minimum tread depth of 7 inches from nosing to nosing measured at a point 12 inches from the ~~narrow end of the tread~~ outer edge of the center column.

Comm 21.04 (2) (c) 3. b. The depth of the immediately adjoining winder treads shall be equal at a point 12 inches from the narrow end of the tread or inside face of spindles or balusters.

SECTION 44. Comm 21.04 (2) (c) 3. c. and Comm 21.04 (2) (c) 4. c. are created to read:

Comm 21.04 (2) (c) 3. c. Winder treads may not be used on a straight stairway.

Comm 21.04 (2) (c) 4. c. Winder treads may not be used on a straight stairway.

SECTION 45. Comm 21.04 (2) (e) 1. is amended to read:

Comm 21.04 (2) (e) 1. Within a stairway flight, the greatest tread depths depth may not exceed the smallest tread depth by more than and riser heights may vary by a maximum of 3/16 3/8 inch and the greatest riser height may not exceed the smallest riser height by more than 3/8 inch.

SECTION 46. Comm 21.04 (2) (g) and Comm 21.04 (3) (a) 2. note are created to read:

Comm 21.04 (2) (g) *Walking surface*. The walking surface of stair treads and landings shall be a planar surface that is free of lips or protrusions that could present a tripping hazard.

Comm 21.04 (3) (a) 2. note:

**Note:** A handrail provided at 30 to 38 inches above the tread nosing meets the height requirement for a guardrail on a stairway.

SECTION 47. Comm 21.04 (3) (a) 3. c. is created to read:

Comm 21.04 (3) (a) 3. c. Rope, cable or similar materials used in handrail or guardrail infill shall be strung with maximum openings of 3 ½ inches with vertical supports a maximum of 4 feet apart.

**Note:** In some cases, the vertical supports could be simple cable stays that offer vertical support to the rope or cable span. Structural posts must be supplied to provide the rail with the minimum 200 pound load resistance, as well as to resist the tensile loads exerted by the tightened rope or cable.

SECTION 48. Comm 21.04 (3) (a) 4. is renumbered Comm 21.04 (3) (a) 4. a.

SECTION 49. Comm 21.04 (3) (a) 4. b. and c. are created to read:

Comm 21.04 (3) (a) 4. b. Handrail or guardrail infill components, balusters and panel fillers shall withstand a horizontally applied perpendicular load of 50 pounds on any one-foot-square area.

c. Glazing used in handrail or guardrail assemblies shall be safety glazing.

SECTION 50. Comm 21.04 (3) (c) 1. is amended to read:

Comm 21.04 (3) (c) 1. 'Application.' a. All openings between floors, and open sides of landings, platforms, balconies or porches that are more than 24 inches above grade or a floor shall be protected with guardrails.

b. The requirements under subpar. a. apply where insect screens are the only means of enclosure or protection for a surface that is more than 24 inches above grade or a floor.

c. For exterior applications, the 24 inch vertical measurement shall be taken from the lowest point within 3 feet horizontally from the edge of the deck, landing, porch or similar structure.

SECTION 51. Comm 21.045 (1) to (4) are renumbered Comm 21.045 (2) to (5).

SECTION 52. Comm 21.045 (intro.) is renumbered Comm 21.045 (1) and amended to read:

Comm 21.045 (1) GENERAL. Every exterior or interior ramp which leads to or from a ~~required~~ an exit shall comply with the requirements of this section.

SECTION 53. Comm 21.045 (1) Note is created to read:

**Note:** See ICC/ANSI A117.1 chapter 5 for more guidelines relating to the design and construction of an accessible ramp. Under that standard, ramps along an accessible route for people with disabilities should have a slope of not more than 1-foot of rise in 12-feet of run and should have handrails on both sides of the ramp.

SECTION 54. Comm 21.05 (title) is amended to read:

Comm 21.05 (title) ~~Light~~ Natural light and natural ventilation.

SECTION 55. Comm 21.05 (3) and (4) are repealed.

SECTION 56. Comm 21.05 (5) is renumbered Comm 21.05 (3).

SECTION 57. Comm 21.05 (3) (intro.), as renumbered, is amended to read:

Comm 21.05 (3) (intro.) SAFETY GLASS. Except as provided in par. (e), glazing shall consist of safety glass meeting the requirements of ~~ANSI Z97.1~~ CPSC 16 CFR, Part 1201 when installed in any of the following locations:

SECTION 58. Comm 21.05 (3) (a) and Comm 21.05 (3) (b), as renumbered, are repealed and recreated to read:

Comm 21.05 (3) (a) In any sidelight or glazing adjacent to a door that meets all of the following:

1. The nearest point of the glazing is within 2 feet of the door.
2. The nearest point of the glazing is within 5 feet of the floor.
3. The plane of the glazing is within 30 degrees of the plane of the door when the door is in the closed position.

Comm 21.05 (3) (b) In any wall where the glazing is within 5 feet vertically of the lowest drain inlet and within 3 feet horizontally of the nearest part of the inner rim of a bathtub, hot tub, shower, spa or whirlpool appliance.

SECTION 59. Comm 21.05 (3) note 2 is created to read.

**Note 2:** Glass blocks are considered to be masonry products and are regulated under the ACI 530 standard adopted under s. Comm 20.24. They are not required to be safety glazing.

SECTION 60. Comm 21.08 (1) (intro.) and Table 21.08 are amended to read:

Comm 21.08 (1) (intro.) **FIRE SEPARATION.** Dwelling units shall be separated from garage spaces, accessory buildings, property lines and other dwelling units in accordance with Table 21.08 and the following requirements:

Table 21.08 (partial table)

[**Note to Revisor:** Add this row to the end of current table 21.08]

<b>Between Single Family Dwelling And:</b>	<b>Distance Between Objects <sup>1</sup></b>	<b>Fire Rated Construction <sup>2,5</sup></b>
<u>Zero Lot Line</u>	<u>None</u>	<u>Follow sub. (2) (c) requirements</u>

SECTION 61. Comm 21.08 (1) (a) 4. is repealed.

SECTION 62. Comm 21.08 (1) (c) is renumbered Comm 21.08 (1) (c) 1.

SECTION 63. Comm 21.08 (1) (c) 2. is created to read:

Comm 21.08 (1) (c) 2. Only glazing allowed by the door's listing may be installed in any door required under this section.

SECTION 64. Comm 21.08 (1) (d) 1. is repealed and recreated to read:

Comm 21.08 (1) (d) 1. Access openings in fire separation walls or ceilings shall be protected in one of the following ways:

- a. The opening is protected with a material that has a finish rating of at least 20 minutes.
- b. The opening is protected in the same way as the wall or ceiling where the opening is located.

SECTION 65. Comm 21.08 (2) (a) is repealed and recreated to read:

Comm 21.08 (2) (a) *General*. In 2-family dwellings, dwelling units shall be separated from each other and from shared tenant spaces including attics, basements, garages, vestibules and corridors.

SECTION 66. Comm 21.08 (2) (e) is repealed.

SECTION 67. Comm 21.08 (2) (b), (c) and (d) are renumbered Comm 21.08 (2) (c), (d) and (e).

SECTION 68. Comm 21.08 (2) (b) is created to read:

Comm 21.08 (2) (b) *Attic separation*. Dwelling units with attic space that extends over both units shall be separated in accordance with one of the following:

1. COMPLETE VERTICAL SEPARATION. The units shall be provided with wall construction under par. (d) that extends all the way to the underside of the roof deck.
2. VERTICAL AND HORIZONTAL SEPARATION. a. The units shall be provided with wall construction under par. (d) that extends to the dwelling unit ceiling and ceiling construction under par (e).  
  
b. Dwelling units using this method of separation shall provide attic draft stopping under par. (f) that extends all the way to the underside of the roof deck above and in line with the separation wall.

SECTION 69. Comm 21.08 (2) (d), as renumbered, is amended to read:

Comm 21.08 (2) (d) *Walls*. Walls in the dwelling unit separation shall be protected by not less than one layer of ~~1/2-inch~~ 5/8-inch Type X gypsum wallboard or 2 layers of 1/2-inch gypsum wallboard or equivalent on each side of the wall with joints in compliance with sub. (1) (a) 2.

SECTION 70. Comm 21.08 (2) (f) is created to read:

(f) *Draft stopping for concealed roof spaces and attics*. 1. Attic areas, mansards, overhangs and other concealed roof spaces shall be draft stopped above and in line with the separation wall.

2. Acceptable draft stopping materials include:

- a. 3/8-inch wood structural panel.
- b. 1/2-inch gypsum board.

SECTION 71. Comm 21.09 (1) (b), Comm 21.09 (2) and Comm 21.09 (3) are amended to read:

Comm 21.09 (1) (b) On floor levels that contain one or more sleeping areas, an alarm shall be installed outside of the sleeping rooms, ~~in the vicinity of each sleeping area~~ within 21 feet of the centerline of the door opening to any sleeping room and in an exit path from any sleeping room.

(2) ~~Smoke~~ (a) Except for dwellings with no electrical service, smoke detectors required by this section shall be continuously powered by the house electrical service, and shall be interconnected so that activation of one detector will cause activation of all detectors.

(b) Dwellings with no electrical service shall be provided with battery-powered smoke detectors in the locations under sub. (1). Interconnection and battery-backup are not required in these dwellings.

(3) For family living units with one or more communicating split levels or open adjacent levels with less than ~~one full story~~ 5 feet of separation between levels, one smoke detector on the upper level shall suffice for an adjacent lower level, including basements. Where there is an intervening door between one level and the adjacent lower level, smoke detectors shall be installed on each level.

SECTION 72. Comm 21.09 (6) is created to read:

Comm 21.09 (6) In basements where two required exits are separated by a continuous wall, a smoke detector shall be placed on each side of the wall within 21 feet of each exit.

SECTION 73. Comm 21.095 is created to read:

**Comm 21.095 Automatic fire sprinklers.** (1) Except as allowed under sub. (2), where automatic fire sprinklers using a dedicated water supply system are installed, the design, installation, testing and maintenance shall follow the requirements of NFPA 13D.

(2) Limited area dwelling systems are allowed.

**Note:** See s. Comm 82.40 (3) (e) of the Wisconsin Uniform Plumbing Code for requirements for multi-purpose piping systems. These systems attach fire sprinkler heads to the dwelling's potable water piping system.

**Note:** Chapter 145, Stats., requires automatic fire sprinkler systems, on dedicated water supply systems, to be installed by a licensed sprinkler fitter.

SECTION 74. Comm 21.10 (1) and Comm 21.10 (2) (a) are amended to read:

**Comm 21.10 Protection against decay and termites.** (1) Wood used in any of the ~~locations specified~~ applications under this section shall meet all of the following requirements:

(a) The wood shall be labeled and pressure treated with preservative in accordance with an AWP standard or shall be a naturally durable and decay-resistant ~~species~~ or shall be engineered to be decay resistant.

(b) The wood shall be pressure treated with preservative or shall be naturally termite-resistant unless additional steps are taken to make the wood termite-resistant.

Comm 21.10 (2) (a) Resting directly upon or embedded in earth.

SECTION 75. Comm 21.10 (2) (b) is repealed and recreated to read:

Comm 21.10 (2) (b) Floor joists or sleepers that meet all of the following conditions:

1. The joists or sleepers are protected from the weather.
2. The joists or sleepers are within 18 inches above a lower floor surface, deck or soil.
3. There is no vapor retarder that meets the requirements under s. Comm 21.05 (4) (b) between the joists or sleepers and the soil below.

**Note:** This situation could occur with a floor over a crawl space or when a floor is added over a patio deck or a garage slab.

SECTION 76. Comm 21.10 (2) (g) is repealed.

SECTION 77. Comm 21.10 (2) (c) to (f) are renumbered Comm 21.10 (2) (d) to (g).

SECTION 78. Comm 21.10 (2) (c) is created to read:

Comm 21.10 (2) (c) Floor joists exterior to the dwelling that are within 18 inches above exterior grade, unless protected with a moisture barrier.

**Note:** Acceptable moisture barriers for this application include ¼-inch exterior preservative-treated plywood, or ice dam protection material listed as meeting the requirements of ASTM D 1970 or vapor retarder material, provided they are protected from physical and UV light damage.

SECTION 79. Comm 21.10 (2) (e), Comm 21.10 (2) (f) 1. and Comm 21.10 (2) (g), as renumbered, are amended to read:

Comm 21.10 (2) (e) Sills and rim joists that rest on concrete or masonry and are also below grade or within 8 inches above final exterior grade.

Comm 21.10 (2) (f) 1. Siding and sheathing in contact with concrete, masonry or earth and within 6 inches of earth above final exterior grade.

Comm 21.10 (2) (g) Ends of wood structural members built into and their shims resting on or supported in masonry or concrete walls and having clearances of less than ½ inch on the top, sides and ends.

SECTION 80. Comm 21.10 (2) (h) is repealed and recreated to read:

Comm 21.10 (2) (h) Bottom plates or sole plates of walls that rest on concrete or masonry and that are below exterior grade or less than 8 inches above final exterior grade.

SECTION 81. Comm 21.10 (2) (i) is amended to read:

Comm 21.10 (2) (i) Columns in direct contact with concrete or masonry unless supported by a structural pedestal or plinth block at least ~~3 inches~~ one inch above the floor.

SECTION 82. Comm 21.10 (2) (k) is created to read:

Comm 21.10 (2) (k) Permanent wood foundations.

SECTION 83. Comm 21.10 (4) (b) is repealed.

SECTION 84. Comm 21.10 (4) (a) is renumbered Comm 21.10 (4).

SECTION 85. Comm 21.10 (5) and Comm 21.11 note are created to read:

Comm 21.10 (5) FASTENERS. (a) Fasteners for pressure-preservative treated wood and fire-retardant-treated wood shall meet one of the following requirements:

1. The fastener is a steel bolt with a diameter of 0.5 inch or greater.
2. The fastener is made of stainless steel.
3. The fastener is made of hot-dipped, zinc-galvanized steel with the coating weight and thickness labeled as complying with ASTM A 153.
4. The fastener is made of steel with a mechanically-deposited zinc coating labeled as complying with ASTM B 695, Class 55 or greater.
5. The fastener has coating types and weights in accordance with the fastener manufacturer's recommendations. In the absence of the manufacturer's recommendations subd. 1., 2., 3., or 4. shall apply.

**Note:** "Zinc plated", "zinc coated", "chrome plated", etc. fasteners do not necessarily comply with either of these standards.

(b) When a fastener is used with a hanger or other metal fixture, the fastener shall be of the same material as the hanger or metal fixture.

**Note:** When separate pieces are in close contact, zinc corrodes rapidly in the presence of plain steel. Zinc corrodes much more rapidly in the presence of stainless steel.

(c) For the purposes of this section, a fastener includes nails, screws and bolts, along with nuts and washers.

Comm 21.11 note:

**Note:** See s. Comm 22.04 (2) for requirements for protecting foam plastic on the exterior of a dwelling.

SECTION 86. Comm 21.15 (1) and (2) are renumbered Comm 21.15 (2) and (3), and Comm 21.15 (intro.) is renumbered Comm 21.15 (1).

SECTION 87. Comm 21.15 (1), as renumbered, is amended to read:

Comm 21.15 (1) General. (a) The dwelling and attached structures, such as decks and garages, shall be supported on a structural system designed to transmit and safely distribute the loads to the soil.

(b) The loads for determining the footing size shall include the weight of the live load, roof, walls, floors, pier or column, plus the weight of the structural system and the soil over the footing.

(c) Footings shall be sized to not exceed the allowable material stresses.

(d) The bearing area shall be at least equal to the area required to transfer the loads to the supporting soil without exceeding the bearing ~~values~~ capacity of the soil.

(e) Structures supported on floating slabs or similar shallow foundations may not be physically attached to structures that are supported by footings that extend below the frost line unless an isolation joint is used between the structures. This isolation shall extend for the full height of the structure.

SECTION 88. Comm 21.15 (2) (a) Note, as renumbered, is amended to read:

Note: Unstable soil includes soils that are unable to support themselves at a 90 degree angle for the full depth of the footing.

SECTION 89. Comm 21.15 (2) (b), as renumbered, is amended to read:

Comm 21.15 (2) (b) *Column or pier footing.* 1. The minimum width and length of column or pier footings shall measure at least 2 feet by 2 feet.

2. The minimum depth of column or pier footings shall measure at least 12 inches nominal. ~~The column shall be so placed as to provide equal projections on each side of the column.~~

SECTION 90. Comm 21.15 (2) (e), as renumbered, is amended to read:

Comm 21.15 (2) (e) *Floating slabs.* Any dwelling supported on a floating slab on grade shall be designed through structural analysis. ~~Structures supported on floating slabs may not be physically attached to structures that are supported by footings that extend below the frost line unless an isolation joint is used between the structures.~~

SECTION 91. Comm 21.16 is repealed and recreated to read:

**Comm 21.16 Frost protected shallow foundations.** (1) GENERAL. (a) Except as allowed under sub. (2), footings and foundations, including those for ramps and stoops, shall be placed below the frost penetration level or at least 48 inches below adjacent grade, whichever is deeper.

(b) Footings may not be placed on frozen material.

(2) EXCEPTIONS. (a) Frost protected shallow foundations shall be designed in accordance with ASCE-32 as adopted in table Comm 20.24-5.

(b) Portions of footings or foundations located directly under window areaways do not require frost protection provided the rest of the foundation is protected in accordance with this section.

(c) Footings and foundations may bear directly on bedrock less than 48 inches below adjacent grade provided all of the following conditions are met.

1. The rock shall be cleaned of all earth prior to placement.
2. All clay in crevices of the rock shall be removed to the level of frost penetration or to 1.5 times the width of the rock crevice, whichever is less.
3. Provisions shall be taken to prevent water from collecting anywhere along the foundation.

SECTION 92. Comm 21.17 (1) (a) 2. and Comm 21.17 (1) (b) 2. are amended to read:

Comm 21.17 (1) (a) 2. For the purposes of this section, a complete drain tile or pipe system includes all of the following:

- a. The drain tile or pipe installed inside and outside the foundation ~~at the footing level.~~ except as allowed under s. Comm 21.17 (3) (d) 1. b.
- b. Bleeders connecting the inside tile or pipe to the outside tile or pipe.
- c. The sump pit or crock.
- d. The discharge piping.
- e. ~~and a~~ A pump or other means of discharging water to ~~natural~~ grade.

Comm 21.17 (1) (b) 2. For the purposes of this section, a partial drain tile or pipe system includes a means of discharging water from the tile or pipe and may include any of the other elements under par. (a) 2.

Note: Means of discharging water include a sump pit, a crock or natural means of drainage to daylight.

SECTION 93. Comm 21.17 (3) (d) 1. to 6. are renumbered Comm 21.17 (3) (d) 2. to 7.

SECTION 94. Comm 21.17 (3) (d) 1. is created to read:

Comm 21.17 (3) (d) 1. a. Except as allowed under subd. 1. b., the top of the tile or pipe shall be at or below the top of the footing.

b. Where the top of the footing is more than 4 inches below the bottom of the floor slab, tile or pipe is required on the interior of the foundation only and it shall be placed directly under the floor.

**Note:** This situation will commonly occur with a walk-out basement.

SECTION 95. Comm 21.17 (3) (d) 6., as renumbered, is amended to read:

Comm 21.17 (3) (d) 6. a. Bleeder tiles or pipes shall be provided at no more than 8-foot intervals to connect the exterior drain tile or pipe to the interior drain tile or pipe.

b. Bleeder tiles or pipes shall have a minimum interior diameter of 3 inches.

c. Direct connection of the bleeders is not required if the intersection of the bleeder with the tile or pipe is covered with a membrane or fabric that prevents soil and fines from entering the system.

SECTION 96. Comm 21.18 (1) (d) 1. Note is created to read:

Comm 21.18 (1) (d) 1. **Note:** Per s. Comm 21.22 (1), sill plates are not required on foundation walls of poured concrete or on masonry walls with mortar- or grout-filled cores or on masonry walls with a solid block top course.

SECTION 97. Comm 21.18 (1) (d) 2. b. is amended to read:

Comm 21.18 (1) (d) 2. b. ~~Solid blocking~~ Blocking and bridging shall be the same depth as the joist.

SECTION 98. Comm 21.18 (2) (a) (title), Comm 21.18 (2) (b) (title) and Comm 21.18 (2) Note are created to read:

Comm 21.18 (2) (a) (title) *General structural requirements.*

Comm 21.18 (2) (b) (title) *Equalized loading*.

Comm 21.18 (2) Note:

**Note:** See s. Comm 21.15 (1) (c) for trench footing requirements.

SECTION 99. Comm 21.18 (3) (a) is repealed and recreated to read:

Comm 21.18 (3) (a) *Dampproofing*. 1. Except as allowed under subd. 3., masonry block foundation walls shall be coated with a layer of minimum 3/8-inch thick type M or S portland cement mortar parging on the exterior of the wall from footing to finished grade.

2. Masonry foundation walls shall be damp-proofed by applying to the exterior surface of the portland cement parging from footing to finished grade, a continuous coating of one of the following:

- a. A bituminous coating applied in accordance with the manufacturer's instructions.
- b. Acrylic-modified cement applied at a minimum rate of 3 pounds per square yard.
- c. A layer of minimum 1/8-inch thick structural surface bonding material labeled as complying with ASTM C887.

**Note:** The ASTM C887 standard is entitled, "Standard Specification for Packaged, Dry, Combined Materials for Surface Bonding Mortar."

- d. A waterproofing treatment applied in accordance with the manufacturer's instructions.

3. a. Parging of masonry block foundation walls is not required where a dampproofing material is sufficiently flexible to be listed or designed for direct application to masonry block.

b. Parging of masonry block foundation walls is not required where a layer of minimum 1/4-inch thick structural surface bonding material labeled as complying with ASTM C887 is used for dampproofing.

SECTION 100. Comm 21.18, Table 21.18-C footnote a, Table 21.18-D footnote a, Table 21.18-E footnote a, and Table 21.18-F footnote a are amended to read:

Comm 21.18, Table 21.18-C footnote a, Table 21.18-D footnote a, Table 21.18-E footnote a, and Table 21.18-F footnote a: For design lateral soil loads, see s. Comm 21.18 (1) (d) (e). Soil classes are in accordance with the Unified Soil Classification System and design lateral soil loads are for moist soil conditions without hydrostatic pressure.

SECTION 101. Comm 21.18 (4) and Comm 21.22 (1) are repealed and recreated to read:

Comm 21.18 (4) WOOD FOUNDATIONS. Wood foundations shall be designed and constructed in accordance with the standard adopted in Table 20.24-2.

**Note:** The department will accept Permanent Wood Foundations Design and Construction Guide published by the Southern Forest Products Association through the Southern Pine Council, as complying with this standard. The Design and Construction Guide requires a 3.5 inch thick floor slab if a poured concrete floor slab is used.

Comm 21.22 (1) FLOOR JOISTS. (a) *General*. 1. Floor joists shall comply with the structural requirements and live load determination under s. Comm 21.02.

2. Where the joists of a floor system are parallel to, and located between bearing walls above and below, the joists shall be doubled.

(b) *Floor joists on concrete walls*. Where a sill plate is provided for floor joists on poured concrete, the sill plates shall be fastened to the foundation.

**Note:** Section Comm 21.18 (1) (d) requires the floor joists to also be fastened to the sill plate.

(c) *Floor joists on masonry walls with a solid top course*. Where a sill plate is provided for floor joists on solid block top course masonry, the sill plate shall be fastened to the foundation.

(d) *Floor joists on masonry walls with open top course*. 1. Where the masonry wall has an open top course, a sill plate at least as wide as the foundation wall shall be fastened to the foundation.

2. Where anchor bolts are used on masonry walls with an open top course, the minimum width of an individual piece making up the sill plate shall be at least 5.5 inches.

**Note:** A sill plate can be made of multiple pieces to achieve the full width.

SECTION 102. Comm 21.22 (1m) is repealed.

SECTION 103. Comm 21.22 (3) (intro.), (a) and (b) are renumbered Comm 21.22 (3) (a), (b) and (c).

SECTION 104. Comm 21.22 (3) (d) is created to read:

Comm 21.22 (3) (d) Lateral restraint for all wood beams shall be provided at all columns using a saddle or other approved connection where the beam meets one of the following conditions:

1. The beam is not restrained at both ends.

2. The beam is more than 11.25 inches deep using actual measurement.

**Note:** A saddle supports the beam on the bottom and allows for the through-connection of fasteners into the side of the beam

SECTION 105. Comm 21.22 (8) (b) and Table 21.22-C are repealed.

SECTION 106. Comm 21.24 (2) is amended to read:

Comm 21.24 (2) DURING CONSTRUCTION. During construction, wall cavity insulation may not be installed until a water-resistant ~~exterior~~ covering is in place over the wall cavity and windows, doors and a roof with at least underlayment are installed.

SECTION 107. Comm 21.24 (2) Note is amended to read:

**Note:** An example of acceptable water-resistant covering for a wall is foam sheathing with permanently taped joints ~~and the permanent doors and windows installed.~~

SECTION 108. Comm 21.24 (3) (c) is renumbered Comm 21.24 (3) (d).

SECTION 109. Comm 21.24 (3) (c), Comm 21.24 (3) Note, and Comm 21.24 (4) are created to read:

Comm 21.24 (3) (c) 1. Any joints between 2 pieces of flashing that form a vertical joint shall be lapped a minimum of 6 inches and sealed.

2. Any joints between 2 pieces of flashing that form a horizontal joint shall be lapped a minimum of 2 inches and sealed unless otherwise specified by the flashing manufacturer.

3. Sealants used for flashing shall be exterior grade and shall be compatible with the materials being sealed.

Comm 21.24 (3) Note:

**Note:** See s. Comm 21.26 (5) for additional flashing requirements with masonry cavity walls and s. Comm 21.28 (7) for additional flashing requirements with roofing.

Comm 21.24 (4) WATER-RESISTIVE BARRIER REQUIREMENTS. (a) *General.* 1. Exterior walls of wood or metal frame construction shall be provided with a water-resistive barrier from the highest point to the bottom of the permanent weather-resistant covering.

**Note:** Acceptable water-resistive barrier materials include polymeric-based house wraps and spray-applied water-resistive barriers installed per the manufacturer's instructions, # 15 or greater asphalt-saturated felts that comply with ASTM D 226 for type I felt, and extruded foam sheathing with permanently taped joints. Duct tape or similar will not result in a permanently taped joint.

2. Structural products with an integral water-resistive barrier may be approved by the department as a complete assembly.

(b) *Material compatibility.* The water-resistive barrier material shall be compatible with the other materials in the wall with which it will come into contact.

**Note:** Spray-applied water-resistive barriers may not be compatible with foam plastic insulation.

(c) *Performance requirements.* 1. Polymer-based house wraps shall meet all of the following requirements:

a. A water vapor permeability rating of 5 perms or higher when tested in accordance with ASTM E96.

b. An acceptable water-resistance rating determined in accordance with ASTM D779, AATCC 127 or CCMC 07102.

**Note:** Asphalt-saturated felt or "tar paper" is not a polymeric-based house wrap.

**Note:** For more information on the water-resistance tests and their results, see the International Code Council Evaluation Services Acceptance Criteria AC 38.

2. Spray-applied water-resistive barriers shall be approved under the International Code Council Evaluation Services.

**Note:** For approval criteria, see ICC – ES acceptance criteria AC 212 or successor document.

(d) *Application.* 1. Horizontal seams in sheet or strip material shall be overlapped such that the upper layer extends over the lower layer at least 2 inches.

2. Vertical seams in sheet or strip materials shall be overlapped at least 6 inches.

3. Any rips, tears or voids shall be patched in accordance with subs. 1. and 2.

(e) *Penetrations.* 1. Penetrations caused by fasteners of the water-resistive barrier or the weather-resistant exterior covering do not require sealing.

2. Penetrations of 5 square inches or less with an annular space of no more than 1/2" shall be sealed with caulk or similar material.

3. Penetrations of greater than 5 square inches shall be flashed in accordance with sub. (3).

SECTION 110. Comm 21.25 (1) (title) is amended to read:

Comm 21.25 (1) (title) ~~STUD CONFIGURATION AND BRACING.~~

SECTION 111. Comm 21.25 (1) (b) is repealed.

SECTION 112. Comm 21.25 (1) (a) is renumbered Comm 21.25 (1).

SECTION 113. Comm 21.25 Table 21.25-A is repealed and recreated to read:

TABLE 21.25-A SIZE, HEIGHT AND SPACING OF WOOD STUDS <sup>a</sup>							
STUD SIZE (inches)	BEARING WALLS					NONBEARING WALLS	
	Laterally unsupported stud height <sup>a</sup> (feet)	Maximum spacing when supporting roof and ceiling only (inches)	Maximum spacing when supporting one floor, roof and ceiling (inches)	Maximum spacing when supporting two floors, roof and ceiling (inches)	Maximum spacing when supporting one floor only (inches)	Laterally unsupported stud height <sup>a</sup> (feet)	Maximum spacing (inches)
2 x 3 <sup>b</sup>	-	-	-	-	-	10	16
2 x 4	10	24	16	-	24	14	24
3 x 4	10	24	24	16	24	14	24
2 x 5	10	24	24	-	24	16	24
2 x 6	10	24	24	16	24	20	24

a. Listed heights are distances between points of lateral support placed perpendicular to the plane of the wall. Increases in unsupported height are permitted where justified by analysis.

b. May not be used in exterior walls.

SECTION 114. Comm 21.25 (6) (a) 4. is renumbered Comm 21.25 (6) (a) 5.

SECTION 115. Comm 21.25 (6) (a) 4., and Comm 21.25 (7), (8) and (9) are created to read:

Comm 21.25 (6) (a) 4. All columns shall be positively attached to the beams they support using clips, straps or saddles.

Comm 21.25 (7) FOUNDATION CRIPPLE WALLS. (a) Foundation cripple walls shall be framed with studs at least as large as the studs above.

(b) When more than 4 feet in height, cripple walls shall be framed with studs needed for an additional floor level.

(c) Cripple walls with a stud height of less than 14 inches shall be sheathed on at least one side for its entire length with a wood structural panel that is fastened to both the top and bottom plates or the cripple walls shall be constructed of solid blocking.

(d) Cripple walls with a stud height of 14 inches or greater shall be braced in accordance with sub. (8) or (9).

(e) Cripple walls shall be fully supported by a continuous foundation.

Comm 21.25 (8) WALL BRACING. (a) *General.* Dwellings using wood-framed walls shall be braced in accordance with this section. Where a building, or a portion thereof, does not comply with one or more of the bracing requirements in this section, those portions shall be designed and constructed in accordance with accepted engineering practice.

(b) *Bracing Materials and Methods.* Braced wall lines, both interior and exterior shall be braced using one of the following materials and methods:

1. a. Nominal 1-inch-by-4-inch continuous diagonal braces let in to the top and bottom plates.

b. The let-in bracing shall be placed at an angle not more than 60 degrees or less than 45 degrees from the horizontal.

2. a. Preformed metal continuous diagonal T-bracing not less than 22 gage thick and 1  $\frac{3}{4}$  inch wide let in to the top and bottom plates and the intervening studs installed in accordance with the manufacturer's specifications.

b. The let-in bracing shall be placed at an angle not more than 60 degrees or less than 45 degrees from the horizontal.

Note: 22 gage steel is 0.03 inches thick.

3. Wood boards of 5/8-inch net minimum thickness applied diagonally on studs spaced a maximum of 24 inches fastened to studs in accordance with the fastener table in the appendix.

4. Wood structural panel sheathing with all edges fastened to framing or blocking in accordance with the fastener table in the appendix and not less than 3/8 inch thick for 16-inch stud spacing and not less than 7/16 inch thick for 24-inch stud spacing.

5. Minimum one-half-inch thick structural fiberboard sheathing applied vertically or horizontally on studs spaced a maximum of 16 inches on center. Structural fiberboard sheathing shall be installed in accordance with the fastener table in the appendix.

6. Gypsum board with minimum ½-inch thickness placed on studs spaced a maximum of 24 inches on center and fastened at panel edges including top and bottom plates at 7 inches on center with the size nails specified in the fastener table in the appendix.

7. Alternative methods under par. (9), including Alternate Braced Wall Panels, par. (9) (b), and Continuously Sheathed Braced Wall Lines using Wood Structural Panels, par. (9) (c)..

8. Other approved wind bracing materials and methods.

**Note:** See Appendix for acceptable nailing schedule.

(c) *Minimum length of braced panels.* 1. 'General.' Except as provided under subd. 2., the minimum lengths shall be as follows:

a. For methods under par. (b) 3., 4. and 5., each braced wall panel shall be at least 48 inches in length, covering a minimum of three stud spaces where studs are spaced 16 inches on center and covering a minimum of two stud spaces where studs are spaced 24 inches on center.

b. For the method under par. (b) 6., each braced wall panel and shall be at least 96 inches in length where applied to one face of a braced wall panel and at least 48 inches in length where applied to both faces.

c. For methods under par. (b) 3., 4. and 5., for purposes of computing the percentage of panel bracing required in Table 21.25-H, the effective length of the braced wall panel shall be equal to the actual length of the panel.

d. When the method under par. (b) 6. panels are applied to only one face of a braced wall panel, bracing percentages required in Table 21.25-H under other methods permitted column shall be doubled.

2. 'Exceptions.' a. Lengths of braced wall panels for continuous wood structural panel sheathing shall be in accordance with sub. (9) (c).

b. Lengths of alternate braced wall panels shall be in accordance with sub. (9) (a) or (b).

c. For methods under par. (b) 3., 4. and 5., panels between 36 inches and 48 inches in length shall be permitted to count towards the required percentage of bracing in Table 21.25-H, and the effective contribution shall comply with Table 21.25-G.

**TABLE 21-25-G**  
**EFFECTIVE LENGTHS FOR BRACE WALL PANELS LESS THAN 48 INCHES IN ACTUAL LENGTH**  
**(BRACING METHODS PAR. (b) 3, (b) 4 and (b) 5)**

Actual Length of Braced Wall Panel (inches)	Effective Length of Braced Wall Panel (inches)		
	8-foot Wall Height	9-foot Wall Height	10-foot Wall Height
48	48	48	48
42	36	36	N/A
36	27	N/A	N/A

(d) *Braced Wall Panel Location and Amounts.* Braced wall panels shall begin no more than 12.5 feet from each end of a braced wall line per figures 21.25-A and 21.25-B, and shall be located every 25 feet on center. Bracing amounts shall comply with Table 21.25-H for the bracing materials and methods specified under par. (b).

(e) *Braced Wall Lines.* 1. Maximum spacing between parallel wall lines shall be no more than 35 feet.

2. 'Exception.' Spacing between braced wall lines may be increased to 50 feet however, the percentage of wall bracing on the braced wall lines perpendicular to the spacing, must be increased, by multiplying the values in Table 21.25-G by a factor equal to the braced wall line spacing divided by 35 feet, and the length to width ratio for the floor/roof diaphragm as measured between braced wall lines does not exceed 3:1.

3. Offsets in braced wall lines, out-of-plane of up to 4 feet shall be permitted provided that the total out-to-out offset dimension in any braced wall line is not more than 8 feet per Figure 21.25-C.

4. Variation in bracing method from story to story is permitted.

5. Variation in bracing method from braced wall line to braced wall line within a story is permitted, except that the continuous sheathing method with wood structural panels shall conform to the additional requirements of par. (9) (c).

**TABLE 21.25—H**  
**MINIMUM REQUIRED BRACING AMOUNTS**  
**FOR WALLS**

Wall Supporting:	AMOUNT OF BRACING PER WALL LINE <sup>4</sup> Braced segments shall be located at least every 25-ft o.c. but not less than the following percentages:	
	Wood Structural Panel Sheathing [Sub. (8) (b) 4., (9) (b) &(9) (c)]	Other Methods Permitted [Sub. (8) (b) 1, 2, 3, 5& 6.]
Roof only <sup>1</sup>	16%	16% <sup>2</sup>
Floor and roof	16%	25% <sup>2</sup>
Two Floors and roof	25%	35% <sup>3</sup>

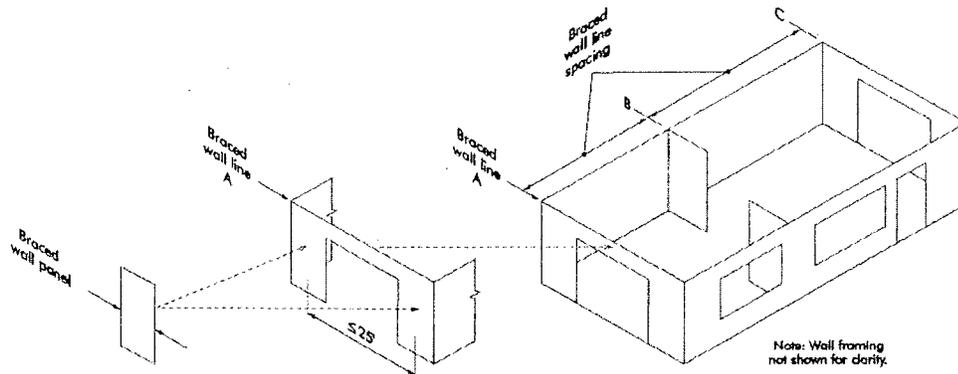
<sup>1</sup> The 'Roof only' condition also applies to one braced wall line of wood frame construction on the ground floor where all other exterior walls on the ground floor are constructed of masonry or concrete in accordance with s. Comm. 21.18.

<sup>2</sup> Wood and metal let in bracing exempt from % bracing requirement, but not spacing requirement.

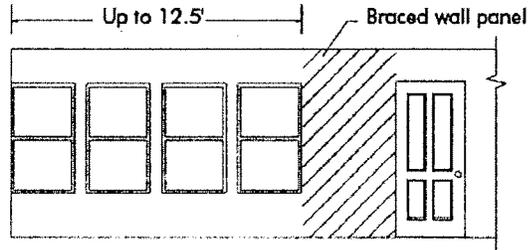
<sup>3</sup> Wood and metal let in bracing not permitted as a bracing method.

<sup>4</sup> Maximum wall heights equal 12 feet. For wall heights over 10 feet, increase percent bracing requirement an additional 20%.

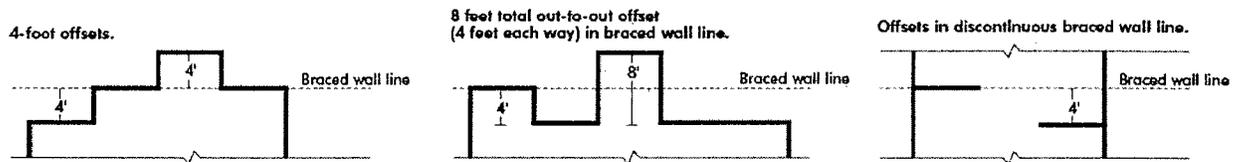
<sup>5</sup> For continuous sheathing method with wood structural panels, percent requirement may be decreased 10% when openings on the wall line do not exceed 85% of wall height and may be decreased 20% when openings do not exceed 67% of wall height. See Table 21.25-J.



**FIGURE 21.25-A**  
**BRACED WALL PANELS AND BRACED WALL LINES**



**FIGURE 21.25-B**  
 PERMITTED BRACED WALL PANEL DISTANCES FROM ENDS OF A BRACED WALL LINE



**FIGURE 21.25-C**  
 PERMITTED OFFSETS

(f) *Angled Corners.* 1. At corners, braced wall lines may angle out of plane up to 45 degrees with a maximum diagonal length of 8 feet.

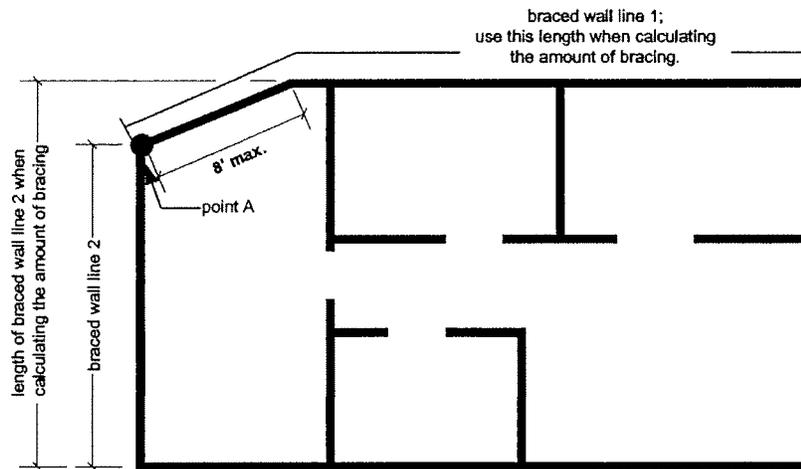
2. When determining the percentage of bracing, the length of each braced wall line shall be determined as shown in Figure 21.25-D.

3. The placement of bracing for the braced wall lines shall begin at the point where the braced wall line, which contains the angled wall adjoins the adjacent braced wall line.

**Note:** This is at Point A as shown in Figure 21.25-D.

4. Where an angled corner is constructed at an angle equal to 45 degrees and the diagonal length is no more than 8 feet in length, the angled wall may be considered as part of either of the adjoining braced wall lines, but not both.

5. Where the diagonal length is greater than 8 feet, it shall be considered its own braced wall line and be braced in accordance with par. (b).



**FIGURE 21.25-D**  
**ANGLED CORNERS**

(g) *Braced wall panel support.* Braced wall panels shall be supported on floor framing or foundations as follows:

1. Where joists are perpendicular to braced wall lines above or below, blocking shall be provided between the joists at braced wall panel locations to permit fastening of wall plates in accordance with the fastener table in the appendix.
2. Where joists are parallel to braced wall lines above or below, a rim joist or other parallel framing member shall be provided at the wall to permit fastening of wall plates in accordance with the fastener table in the appendix.
3. Braced wall panels shall be permitted to be supported on cantilevered floor joists meeting the cantilever limits of s. Comm 21.22 (6) provided joists are blocked at the nearest bearing wall location, except such blocking is not required for cantilevers not exceeding 24 inches where a full height rim joist is provided.
4. Elevated post or pier foundations supporting braced wall panels shall be designed in accordance with accepted engineering practice.

(h) *Panel joints.* 1. 'General.' Except as provided under subd. 2., all vertical joints of panel sheathing shall occur over, and be fastened to common studs. Horizontal joints in braced wall panels shall occur over, and be fastened to common blocking of a minimum 1-1/2 inch thickness.

2. 'Exceptions.' a. Blocking at horizontal joints is not required in wall segments that are not counted as braced wall panels.

b. Where the bracing percentage provided is at least twice the minimum percentage required by Table 21.25-H, blocking at horizontal joints is not required in braced wall panels using methods subs. (b) 4., 5. or 6.

(9) ALTERNATIVE BRACING METHODS AND MODIFICATIONS. (a) *General.* As an alternative to the bracing methods under sub. (8), the wall bracing methods in this subsection may also be used.

(b) *Alternate braced wall panels.* 1. 'General.' Alternate braced wall panels constructed in accordance with subd. 2., 3., 4. or 5. may replace each 4 feet of braced wall panel as required under sub. (8) (b). The maximum height and minimum length of each panel shall be in accordance with Table 21.25-I.

2. 'Supporting roof only.' a. In one-story buildings, each panel shall be sheathed on one face with 3/8-inch-minimum-thickness wood structural panel sheathing nailed with 8d common or galvanized box nails in accordance with the fastening table in the appendix and blocked at all wood structural panel sheathing edges.

b. Two anchor bolts installed in accordance with s. Comm 21.18 (1) (c) 3. shall be provided in each panel.

c. Anchor bolts shall be placed 6 to 12 inches from each end of the plate.

d. Each panel end stud shall have a tie-down device fastened to the foundation, capable of providing an uplift capacity in accordance with Table 21.25-I.

e. The tie-down device shall be installed in accordance with the manufacturer's recommendations.

f. The panels shall be supported directly on a foundation or on floor framing supported directly on a foundation, which is continuous across the entire length of the braced wall line.

g. This foundation shall be reinforced with not less than one number 4 bar at the top and bottom.

h. When the continuous foundation is required to have a depth greater than 12 inches a minimum 12-inch-by-12-inch continuous footing or turned down slab edge is permitted at door openings in the braced wall line.

i. This continuous footing or turned down slab edge shall be reinforced with not less than one number 4 bar at the top and bottom.

j. This reinforcement shall be lapped 15 inches with the reinforcement required in the continuous foundation located directly under the braced wall line.

3. 'Supporting floor and roof only.' In the first story of two-story buildings, each braced wall panel shall be in accordance with subd. 1., except that the wood structural panel sheathing edge nailing spacing shall not exceed four inches on center.

**TABLE 21.25-I**

**MINIMUM LENGTH REQUIREMENTS AND TIE-DOWN FORCES FOR ALTERNATE BRACED WALL PANELS**

	Height of Braced Wall Panel				
	8 ft.	9 ft.	10 ft.	11 ft.	12 ft.
Sheathed Length	2'-4"	2'-8"	2'-8"	3'-2"	3'-6"
Sub. (9) (b) 2. Tie-down Force (lbs)	1800	1800	1800	2000	2200
Sub. (9) (b) 3. Tie-down Force (lbs)	3000	3000	3000	3300	3600

4. 'Alternate bracing method with Extended Header over Opening and Tie Downs, supporting a roof only.' a. Each panel shall have a length of not less than 16 inches and a height of not more than 10 feet.

b. Each panel shall be sheathed on one face with a single layer of 3/8-inch-minimum-thickness wood structural panel sheathing nailed with 8d common or galvanized box nails in accordance with Figure 21.25-E.

c. The wood structural panel sheathing shall extend up over the header and shall be nailed in accordance with Figure 21.25-E.

d. Glue laminated beams, LVL's or a built-up header consisting of at least two 2 X 12's fastened in accordance with the fastener table in the appendix may be used.

e. A spacer, if used, shall be placed on the side of the built-up beam opposite the wood structural panel sheathing.

f. The header shall extend between the inside faces of the first full-length outer studs of each panel.